

Figure 1

Title: Optical Crossbar Using Lasing
Semiconductor Optical Amplifiers
Inventors: Sol P. DiJaili & Jeffrey D. Walker
Atty. Docket No.: 21153-05920

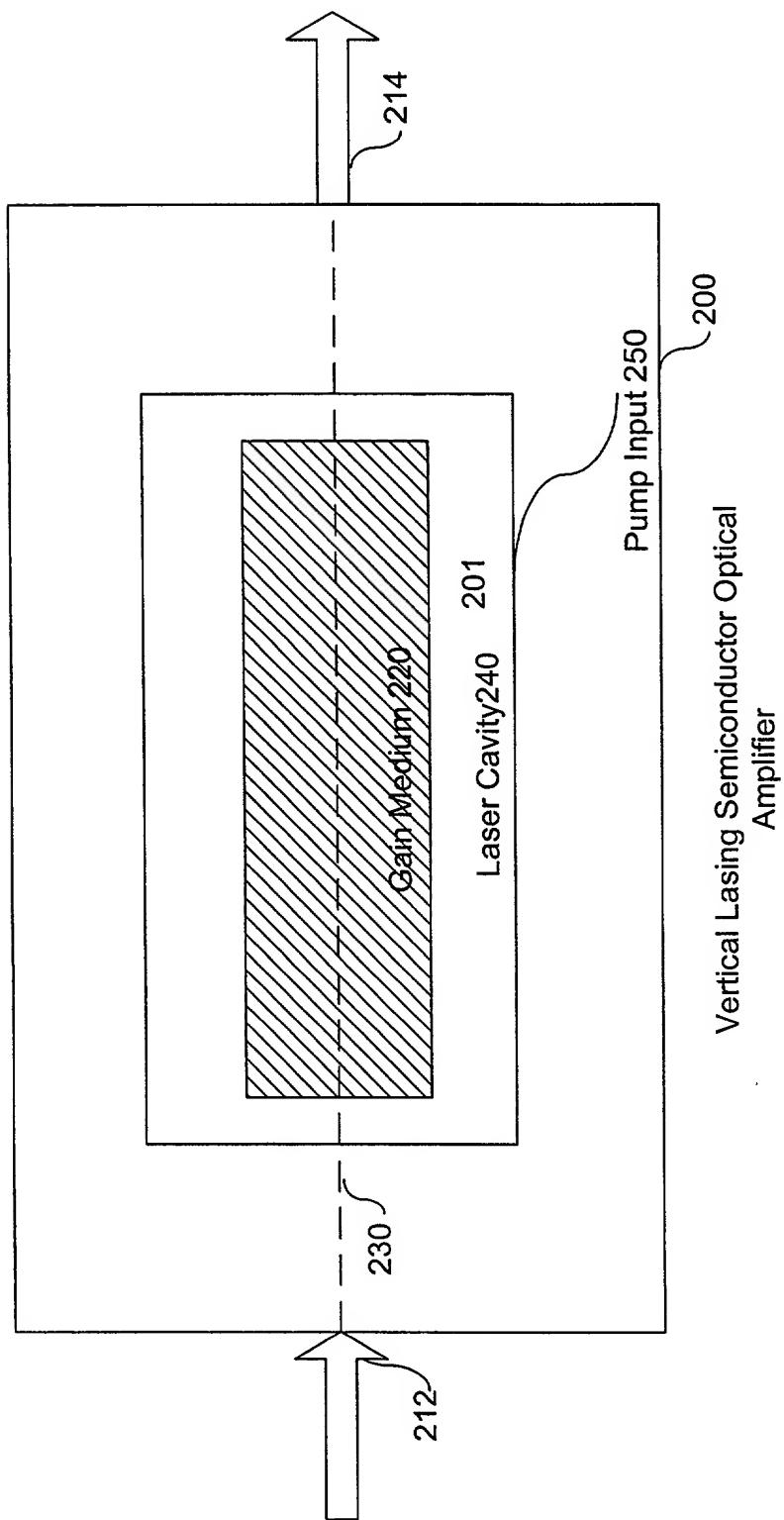


Figure 2

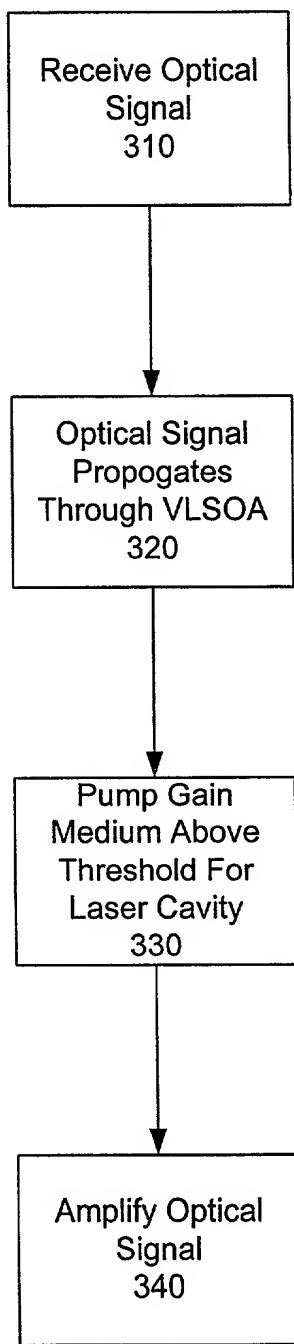
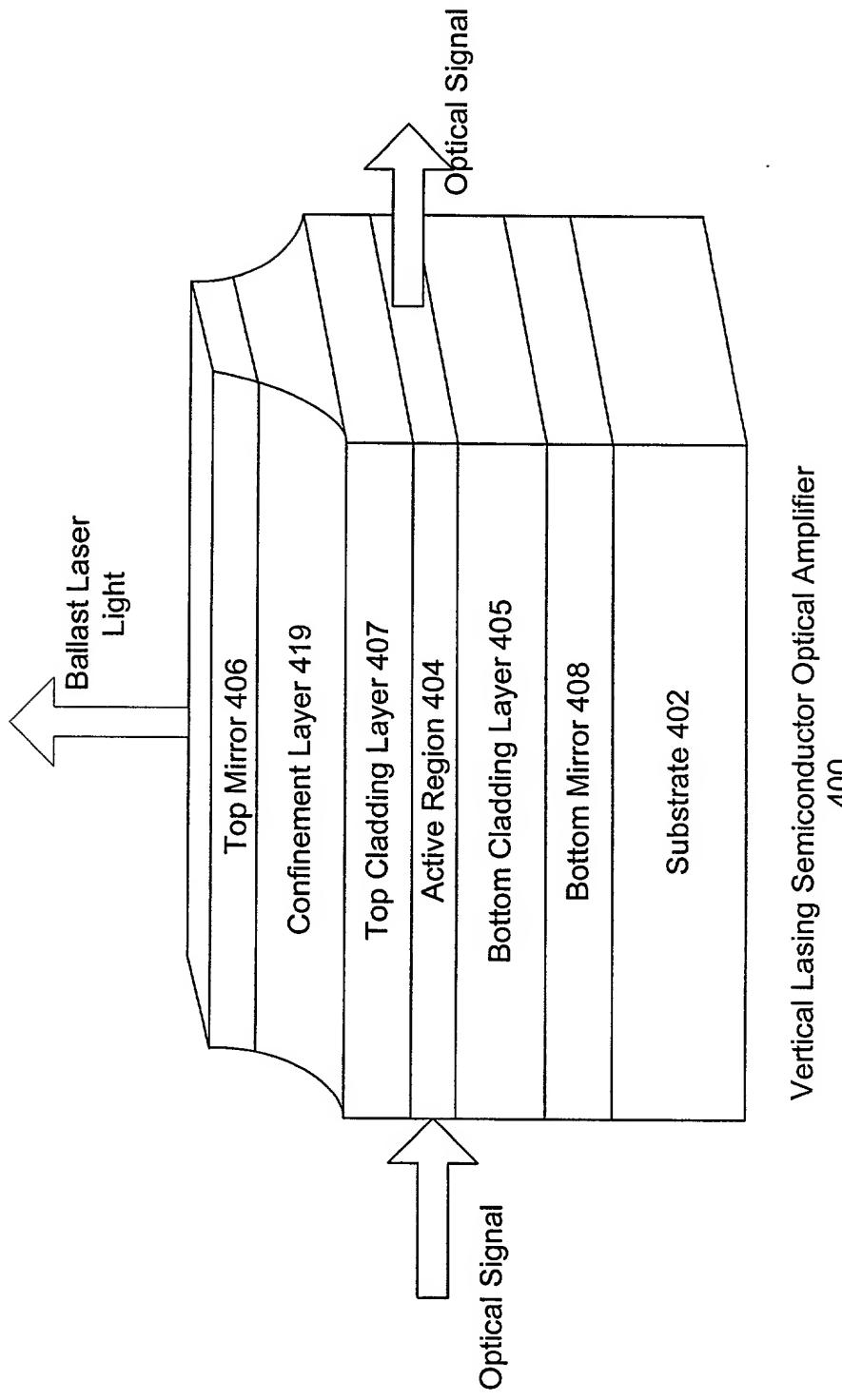
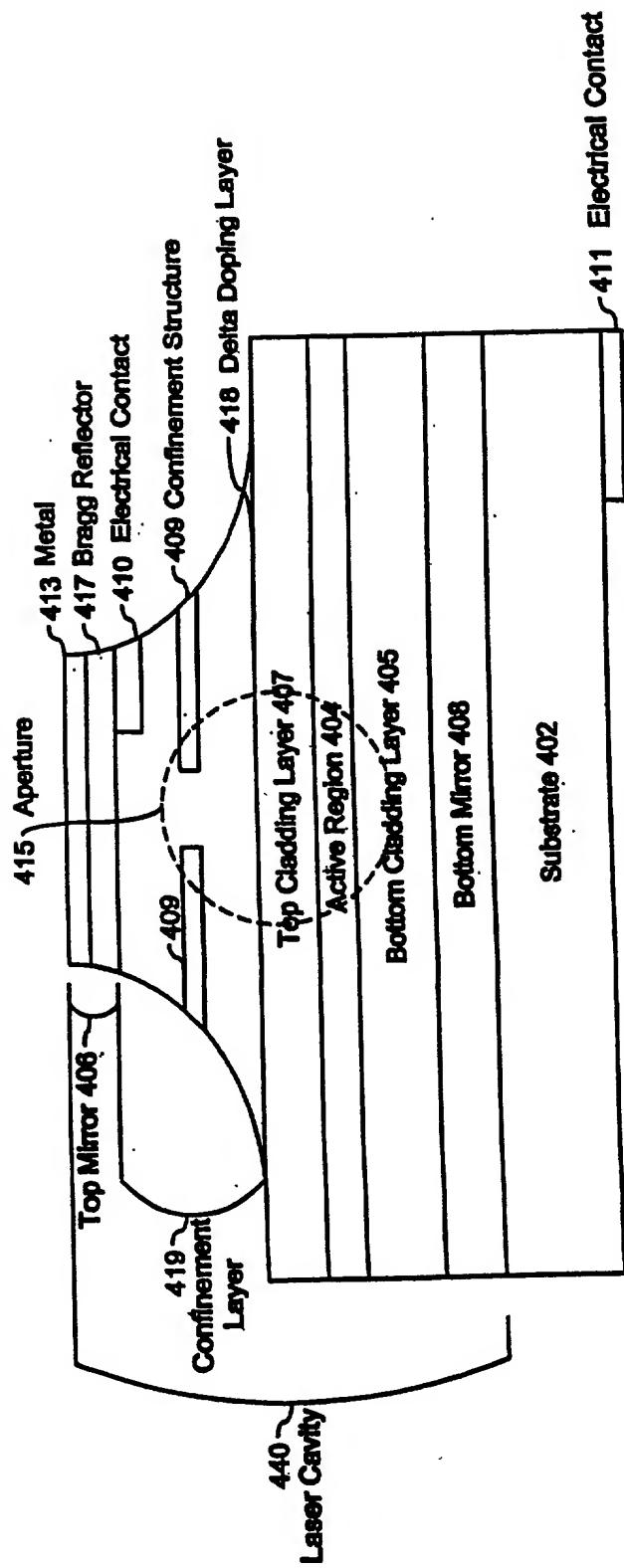


Figure 3



Vertical Lasing Semiconductor Optical Amplifier
400

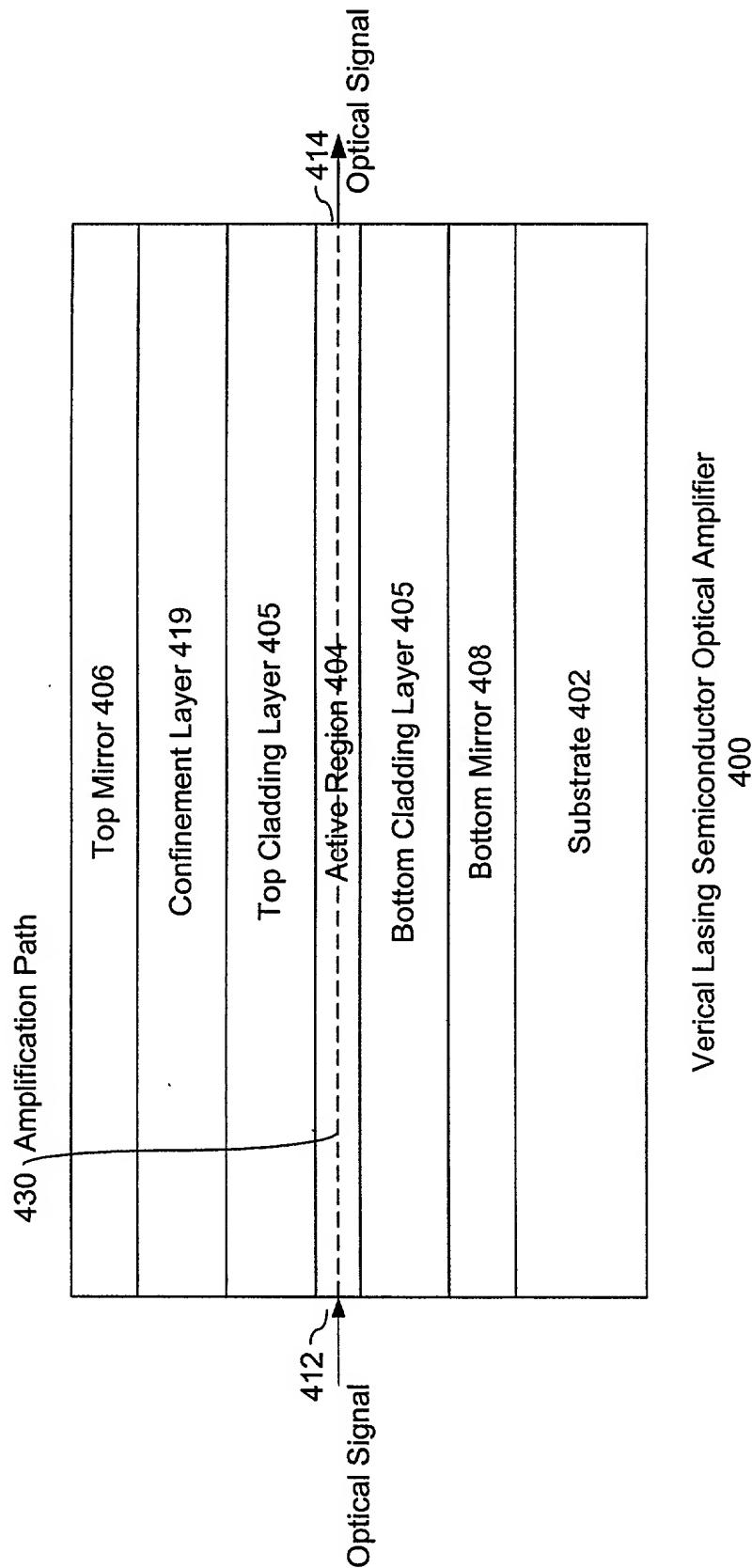
Figure 4A



Vertical Lasing Semiconductor Optical Amplifier 400

Figure 4B

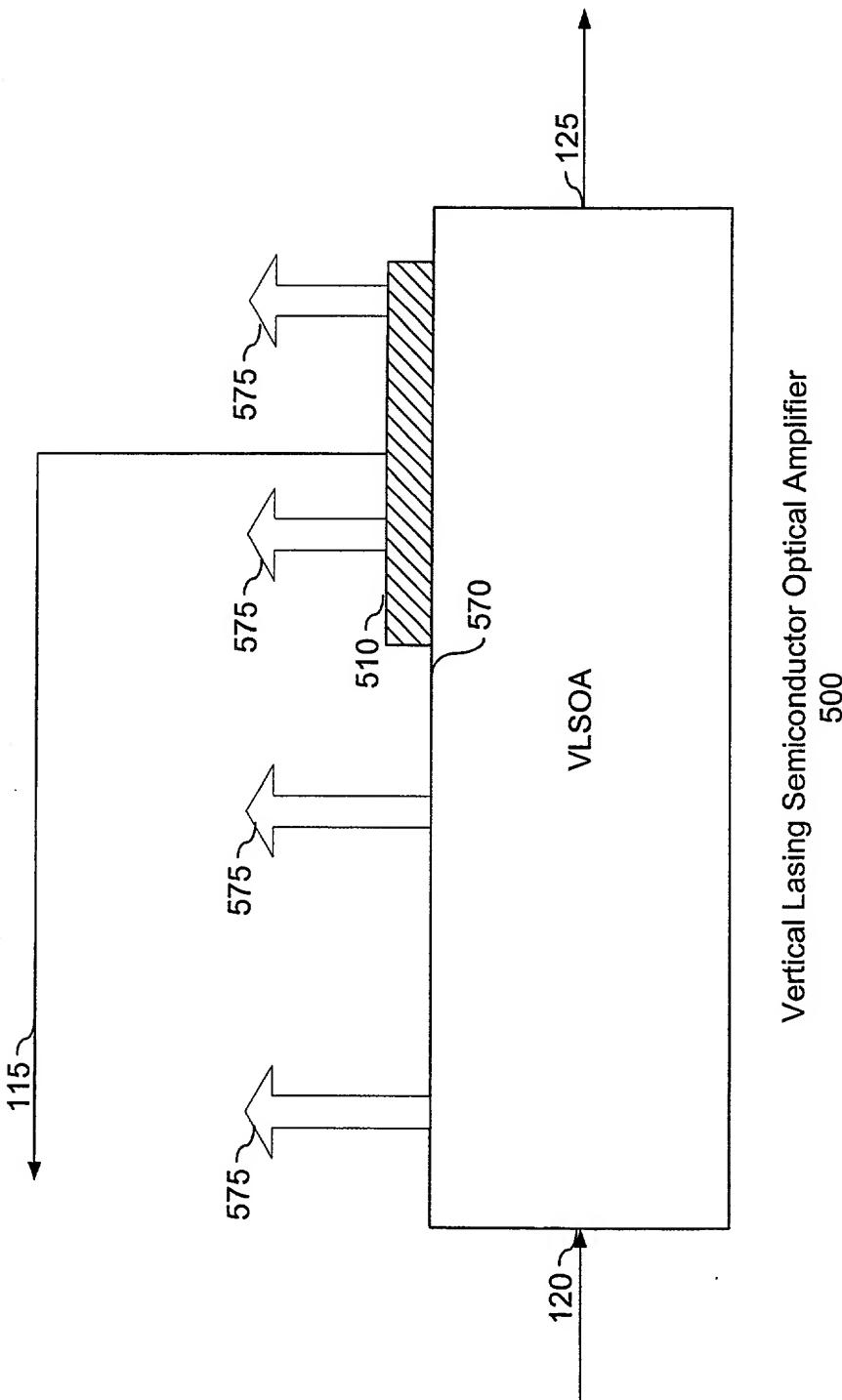
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Vertical Lasing Semiconductor Optical Amplifier
400

Figure 4C

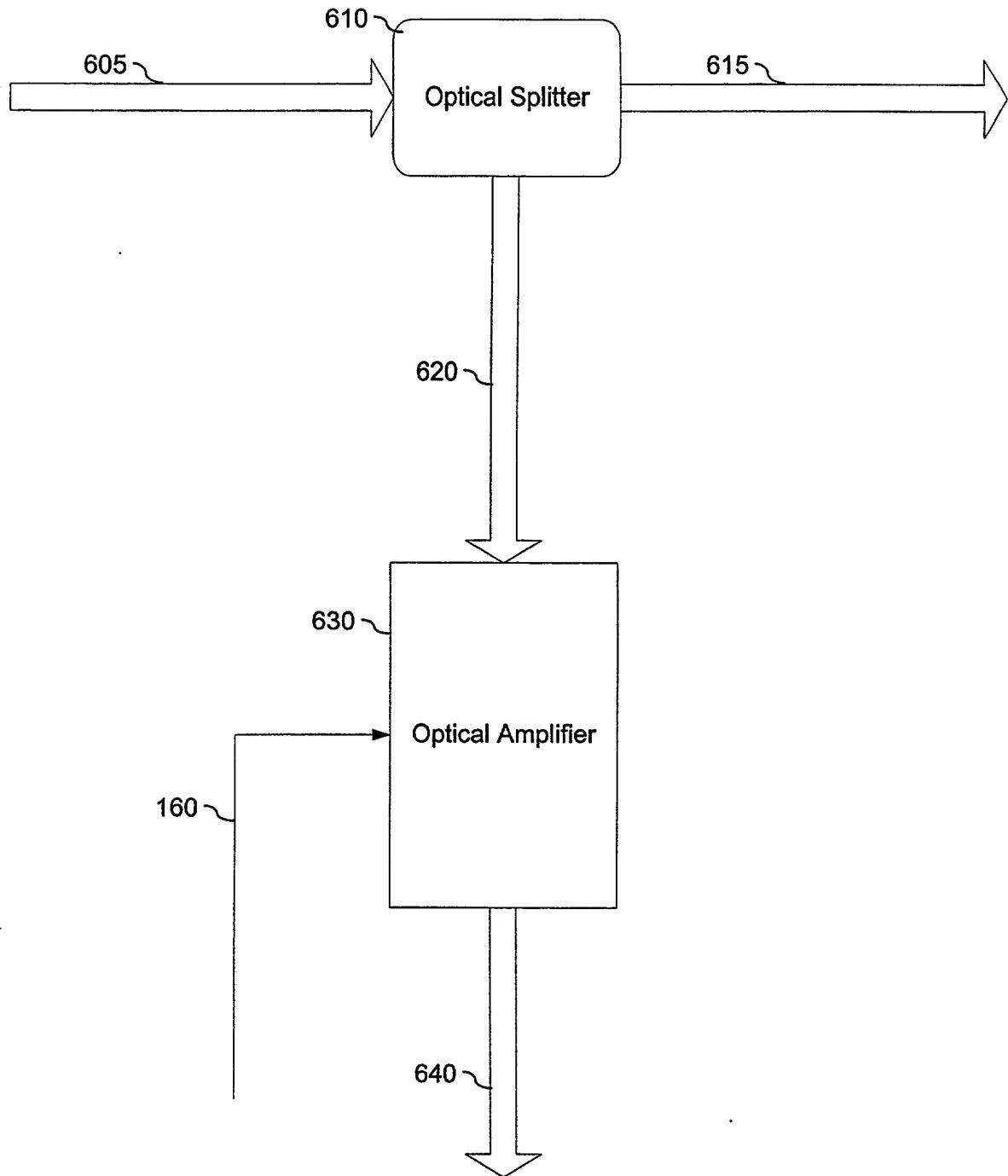
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Vertical Lasing Semiconductor Optical Amplifier
500

Figure 5

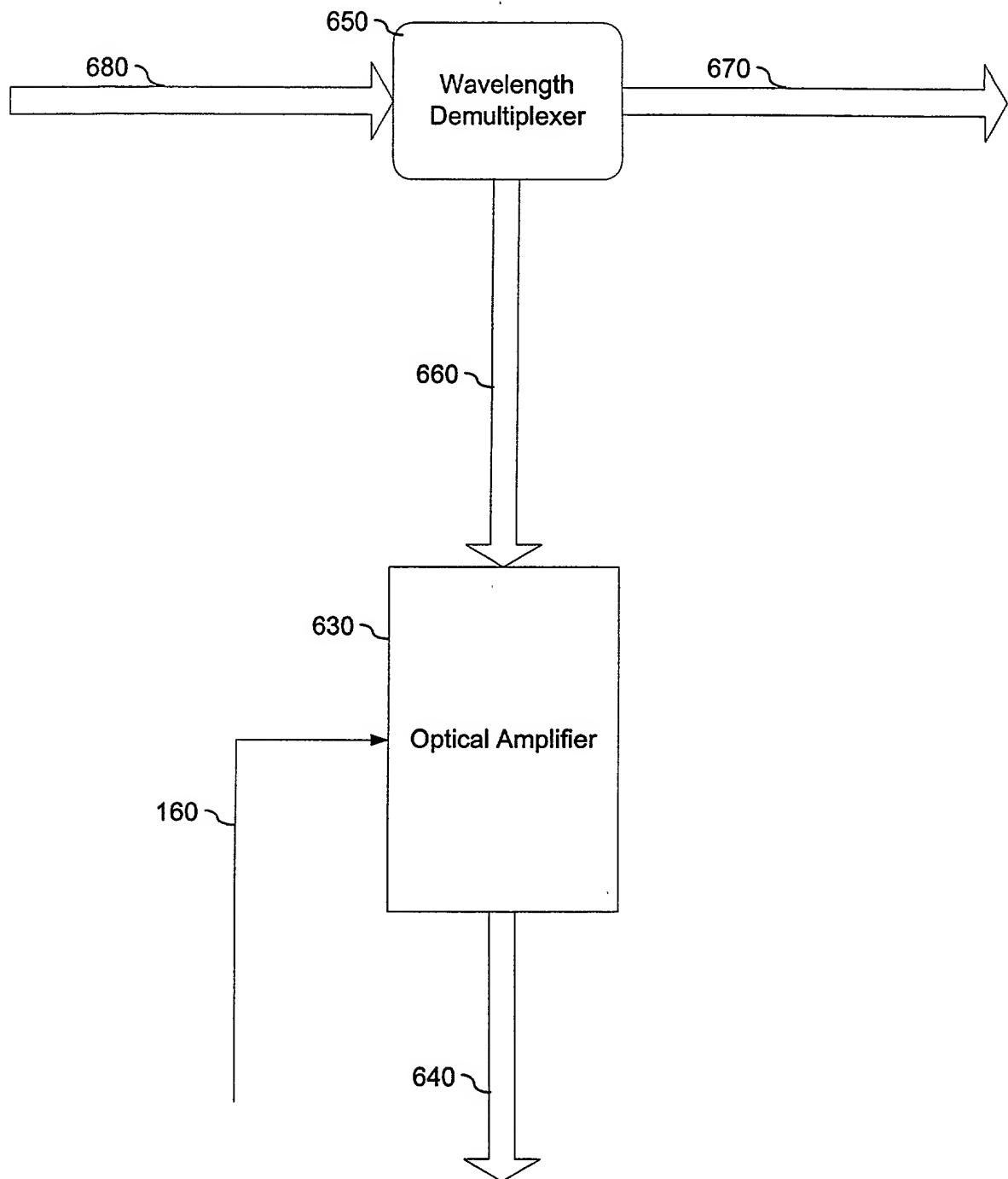
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Optical Routing Node 170

Figure 6A

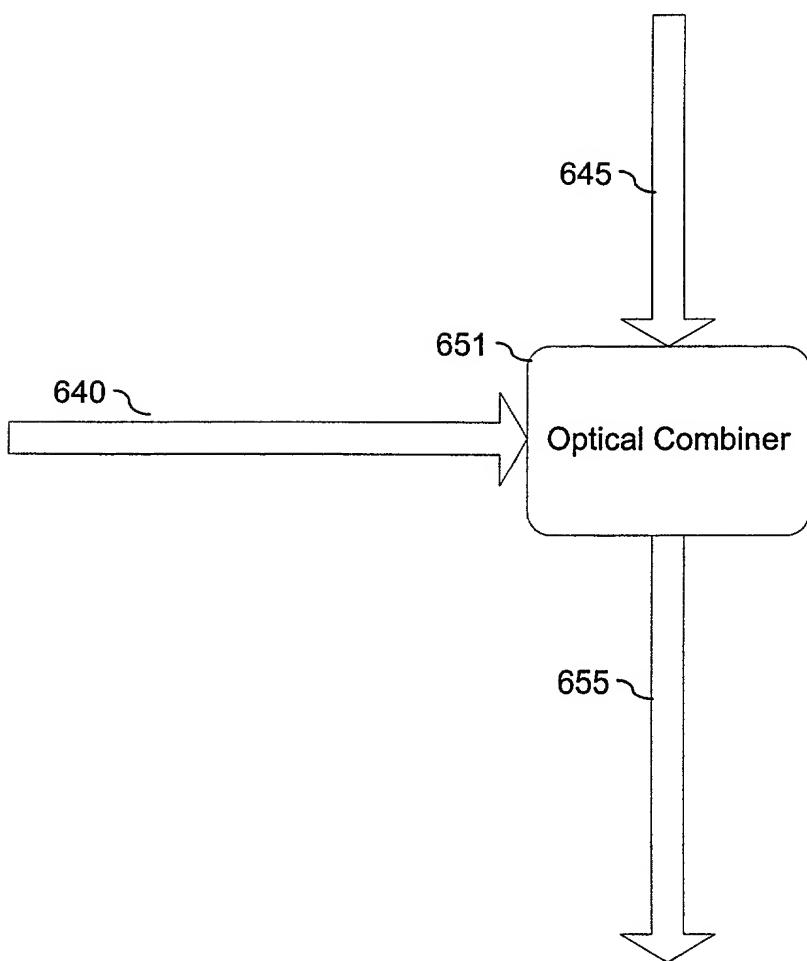
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Optical Routing Node 170

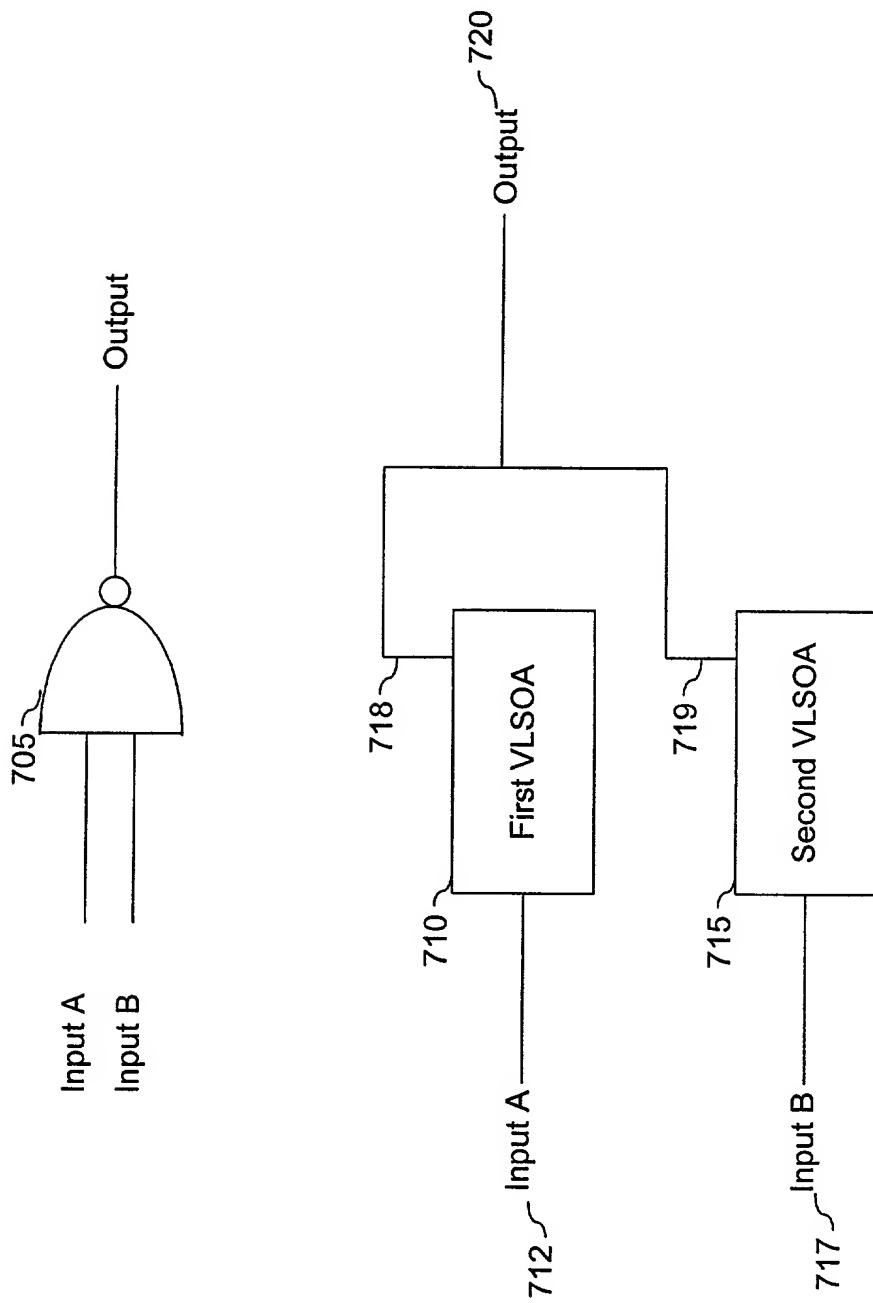
Figure 6B

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Optical Combiner 151

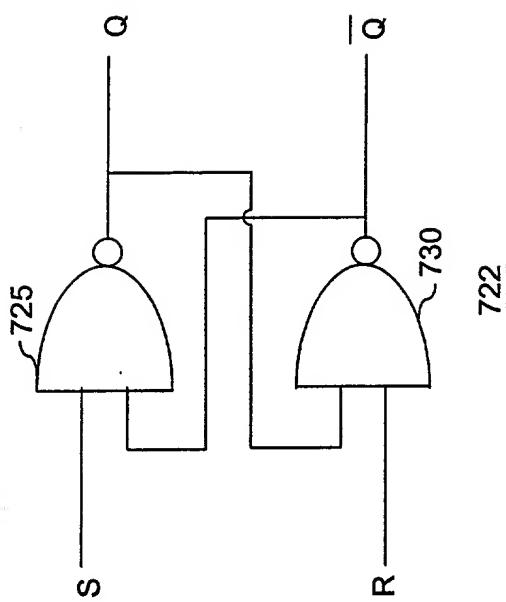
Figure 6C



Optical NAND Gate 700

Figure 7A

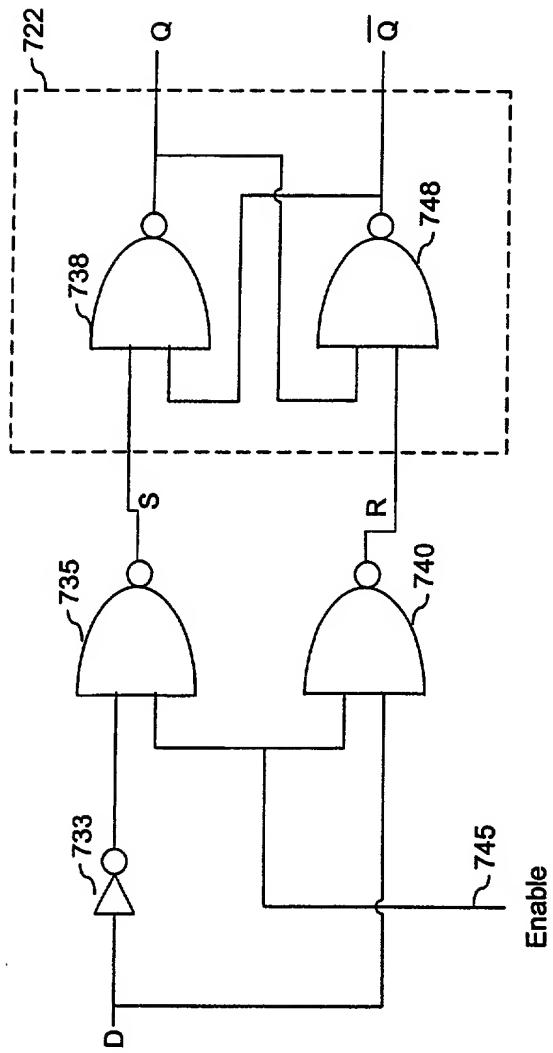
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		S	R	Q	\bar{Q}	
0	0			1	1	Not Used
0	1			0	1	
1	0			1	0	
1	1			0	1	Memory State
				1	0	

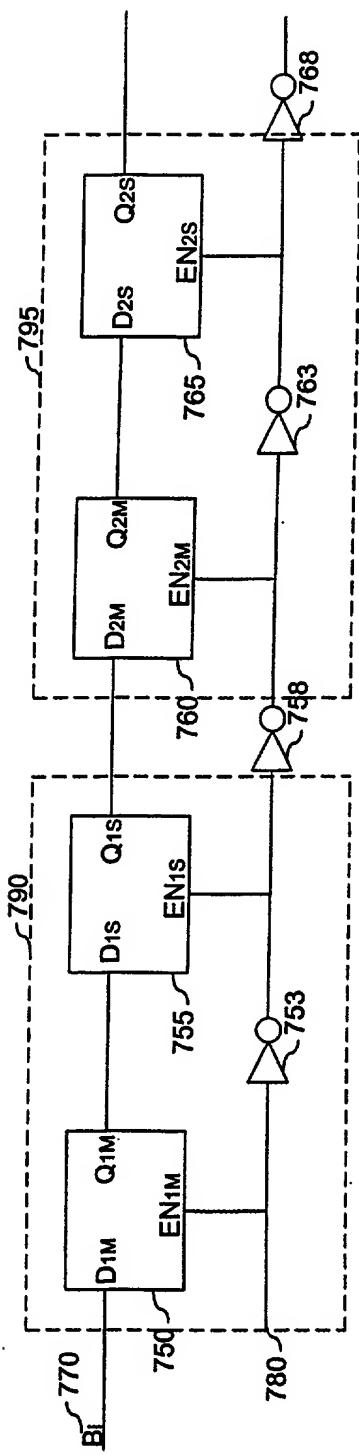
Optical Flip-Flop

Figure 7B



D	Enable	Q	Q	Memory State
0	0			
1	0			
0	1	0	1	
1	1	1	0	

Optical Buffer Element
Figure 7C



775

Control	D1M	Q1M	Q1S	Q2M	Q2S
1	B1		B1		
0		B1	B1		
1	B2		B2	B1	
0		B2	B2	B1	B1

Buffer Array
 Figure 7D

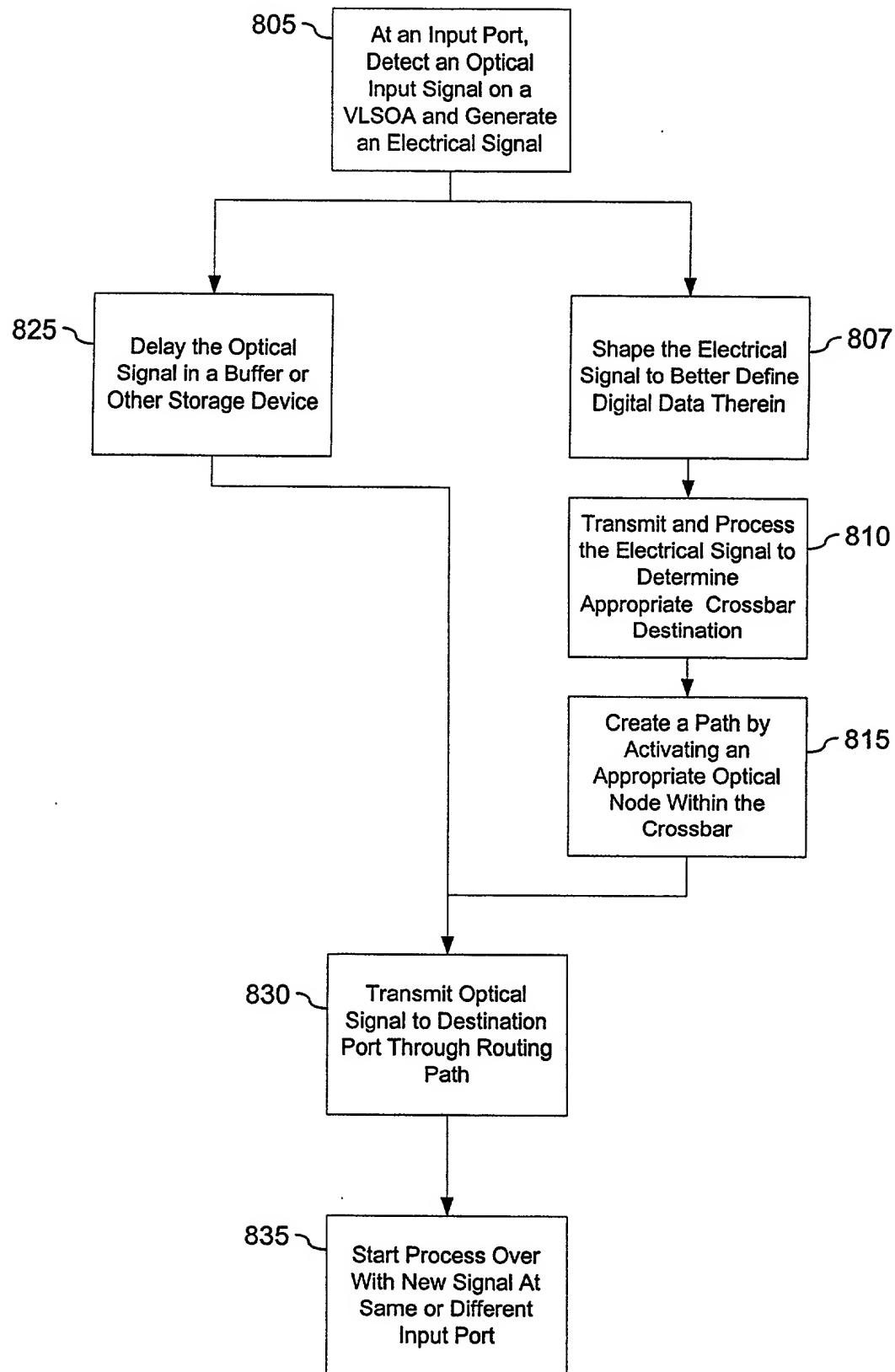


Figure 8